40-500
Solid State Very High Density Matrix

- Solid State 1-Pole Matrix
- High Density 64 x 4 Configuration
- 0.5A Hot or Cold Switching
- 1.5A Crosspoint Inrush Current
- ±60 Volt Rating
- Fast Switch Operation and Long Service Life
- VISA, IVI & Kernel Drivers Supplied for Windows 2000/XP/Vista
- Supported by PXI or LXI Chassis
- 2 Year Warranty

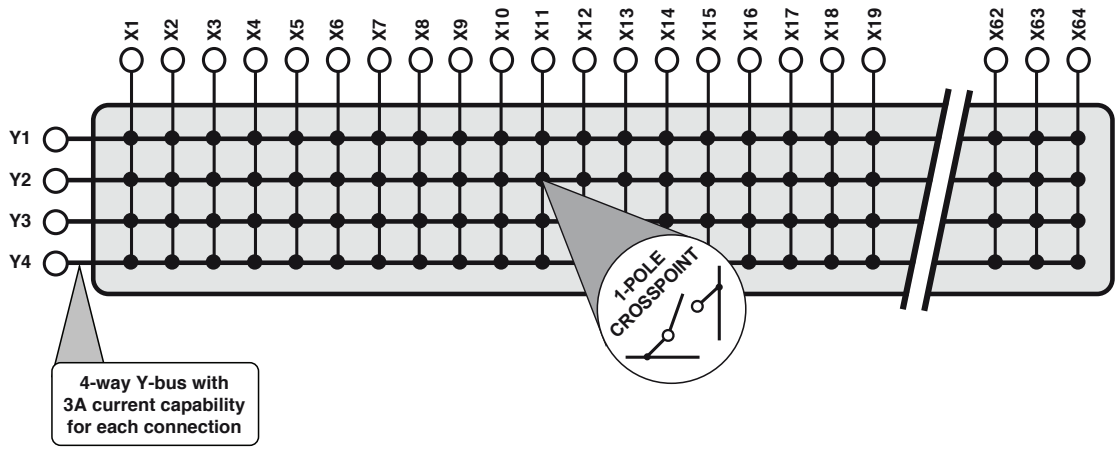
The 40-500 is a very high density matrix using solid state switching configured as a 64x4 1 pole matrix in a single slot 3U PXI module.

It is ideal for applications requiring fast operation and a long service life with frequent switch operations at high currents and voltages. Since the design is based on solid state relays the matrix has no wear out mechanism.

Each matrix crosspoint can switch currents up to 0.5A and can sustain an inrush current of 1.5 A for 100ms, allowing the matrix to be used with capacitive loads. The Y-bus has been designed to carry 3A on each bus, permitting the matrix to be used with multiple crosspoints working at their maximum current at the same time. The module can hot switch voltages up to 60V at full rated current and is suitable for AC or DC operation.

Applications for the 40-500 include routing signals for data acquisition systems or for the slave switching of high current relays. The 40-500 can be used for low current low voltage applications where cost, speed, zero contact bounce and the ability to withstand frequent operation is essential.

Pickering Interfaces is able to offer PXI solid state switching solutions in a variety of configurations. If you have a different requirement for solid state switching contact your local sales office for a quotation.



Switching Diagram for the 40-500 Very High Density Matrix

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Switching Characteristics

Switch Type	Solid State Switch
Max Switch Voltage:	±60V (AC peak or DC)
Max Crosspoint Current:	0.5A continuous 1.5A for 100ms
Initial Path Resistance - On: Switch Leakage Capacitance: Leakage Current (off state):	0.9Ω (Y to X) 2.5nF (single Y to X) <4μA at 60V
Turn On Time: Turn Off Time:	<400μs <200μs
Matrix Bandwidth:	2MHz typical (one crosspoint)

Power Requirements

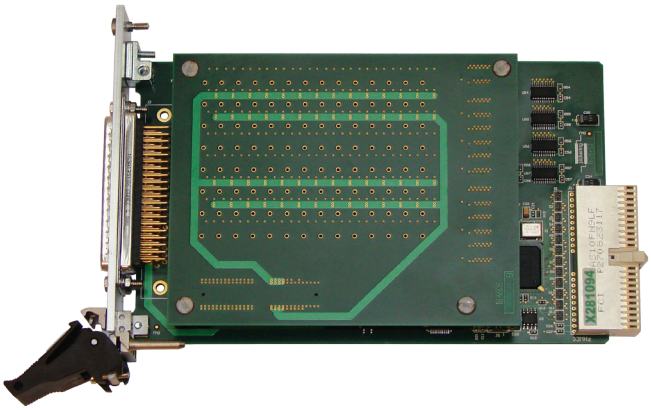
+3.3V	+5V	+12V	-12V
0	0.9 A typical (64 closures)	0	0

Mechanical Characteristics

Single slot 3U PXI (CompactPCI card).
3D models for all versions in a variety of popular file formats are available on request.

Connectors

PXI bus via 32 bit P1/J1 backplane connector.
Signals via front panel 78 way D-type male connector, for pin outs please refer to the operating manual.



Side View of the 40-500 Matrix Module

Product Order Codes

Solid State Very High Density Matrix	**40-500-001**

Mating Connectors & Cabling

Examples of connectors and cabling for the 40-500 are:

40-960-078	78 way D Subminiature solder connector
40-970-078-1M	Cableform, 78 way D Subminiature Female to Female, 3A, 1m Length
40-965-078	Connector Block, Shielded, 78 way D Subminiature Module Mounted

Mating Connectors & Cabling

For connection accessories for the 40-500 module please refer to the **90-006D** 78 way D-type Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.

Programming

Pickering provide kernel, IVI and VISA (NI and Agilent) drivers which are compatible with Windows 2000/XP/ Vista operating systems. The VISA driver is also compatible with Real-Time Operating Systems such as LabVIEW RT. Additionally, QNX is fully supported, for other RTOS support contact Pickering.

These drivers may be used with a variety of programming environments and applications including:

- **National Instruments** products (LabVIEW/LabWindows/ CVI/MAX/TestStand etc.)
- **Microsoft Visual Studio** products (Visual Basic/Visual C+)
- **Agilent VEE**
- **Mathworks Matlab**

Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries.

Operating/Storage Conditions

Operating Conditions

Operating Temperature:	0°C to +55°C
Humidity:	Up to 90% non-condensing
Altitude:	5000m

Storage and Transport Conditions

Storage Temperature:	-20°C to +75°C
Humidity:	Up to 90% non-condensing
Altitude:	15000m

PXI & CompactPCI Compliance

The module is compliant with the PXI Specification 2.2. Local Bus, Trigger Bus and Star Trigger are not implemented. Uses 33MHz 32-bit backplane interface.

Safety & CE Compliance

All modules are fully CE compliant and meet applicable EU directives: Low-voltage safety EN61010-1:2001, EMC Immunity EN61000-6-1:2001, Emissions EN55011:1998.

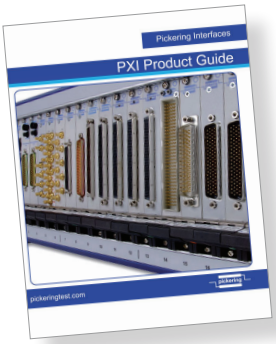
PXI & LXI Chassis Compatibility

Compatible with all chassis conforming to the 3U PXI and 3U cPCI specification. Compatible with Legacy and Hybrid peripheral slots in a 3U PXI Express chassis.
Compatible with Pickering Interfaces LXI Modular Switching chassis. For information on driving your switching solution in an LXI environment refer to the LXI Short Form Catalog.

Latest Details

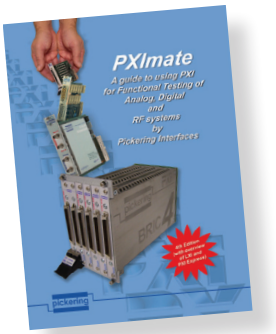
Please refer to our Web Site for Latest Product Details.
www.pickeringtest.com

Please refer to the Pickering Interfaces "**Connection Solutions**" catalog for the full list of connector/cabling options, including drawings, photos and specifications. This is available in either print or as a download. Alternatively our web site has dynamically linked connector/ cabling options, including pricing, for all Pickering PXI modules.



Refer to the "**PXI Product Guide**" for descriptions of Pickering Interfaces' comprehensive range of PXI switching and instrumentation modules, including specifications and product selection guides.

The Product Guide is available on request or can be downloaded from the Pickering website.



Ever wondered what PXI is all about?

Pickering Interfaces' "**PXImate**" Explains the basics of PXI and provides useful data for engineers working on switch based test systems.

The PXImate is available free on request from the Pickering website.

The "**PXI Product Catalog**" gives full details of Pickering's entire range of PXI switch modules, instrument modules and support products.

The PXI Product Catalog is available on request or can be downloaded from the Pickering website.

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